

REMARKS

Claims 1-4 and 8-11 are now pending in the application. Claims 8-11 are added. No new matter is added. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Larue (U.S. Pat. No. 5,705,399) in view of Horowitz et al. (1980) or Hirono et al. (U.S. Pat. No. 6,756,793). Claim 4 stands rejected under U.S.C. § 103(a) as being unpatentable over Larue in view of Horowitz et al. or Hirono et al. as applied to claim 1 above, and further in view of Duncan (U.S. Pat. No. 6,041,642) or Roukes et al. (6,722,200). These rejections are respectfully traversed.

With respect to claim 2, Larue, either singly or in combination with Horowitz, Hirono, or Duncan, fails to show, teach, or suggest an oscillator circuit that oscillates the vibrating reed and outputs a signal indicative of the oscillating frequency of the vibrating reed, and a frequency divider that lowers a frequency of the signal.

It is a longstanding rule that to establish a prima facie case of obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 143 (CCPA 1974), see MPEP §2143.03. Here, the Furthermore, when evaluating claims for obviousness under 35 U.S.C. §103, all of the limitations must be considered and given weight. *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983), MPEP § 2144.03. Here, Larue fails to disclose the limitation of a frequency divider that lowers a frequency of the signal.

As shown in an exemplary embodiment in FIG. 4, a PLL circuit 20 includes a frequency divider 35. The frequency divider 35 receives the signal from an oscillator circuit 10. As described in Paragraph [0033], "in order to increase the sensitivity, the reference frequency of the piezoelectric vibrating reed 12 is increased and this frequency is divided into a lower frequency, which is then input to the PLL circuit 20." In other words, the frequency divider 35 lowers a frequency of the signal received from the oscillator circuit 10.

In contrast, Larue fails to disclose this structure. For example, FIG. 2 of Larue discloses a signal comparison means that receives signals f_1 and f_2 from first and second oscillators, respectively. As best understood by Applicant, Larue is absent of any teaching or suggestion of a frequency divider that lowers a frequency of the signal f_s . Similarly, each of Horowitz, Hirono, and Duncan fail to disclose the frequency divider as claim 2 recites. For example, FIG. 5 of Hirono discloses a phase comparator 54 that receives a signal from an oscillating circuit 52. Hirono appears to be absent of any teaching or suggestion of a frequency divider that lowers a frequency of the signal from the oscillation circuit 52.

Applicant respectfully submits that claim 2, as well as its dependent claims, should be allowable for at least the above reasons. The remaining claims should be allowable for at least similar reasons.

NEW CLAIMS

With respect to claims 8 and 10, the cited art appears to be absent of any teaching or suggestion of a second frequency divider that lowers a frequency of the output signal from the voltage-controlled oscillator. With respect to claims 9 and 11, the cited art appears to be absent of any teaching or suggestion of determining a mass of a liquid based on the oscillation frequency.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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